What Is Claimed Is:

1. A planarization method comprising:

positioning a Group VIII metal-containing surface of a substrate to interface with a polishing surface, wherein the Group VIII metal is selected from the group consisting of rhodium, iridium, ruthenium, osmium, palladium, platinum, and combinations thereof;

supplying a planarization composition in proximity to the interface; and

planarizing the Group VIII metal-containing surface;

wherein the planarization composition comprises an oxidizing gas having a standard reduction potential of at least about 1.4 versus a standard hydrogen electrode at 25°C.

2. The method of claim 1 wherein the Group VIII metal-containing surface of the substrate comprises a Group VIII metal in elemental form or an alloy thereof.

3. The method of claim 2 wherein the Group VIII metal-containing surface comprises elemental platinum, rhodium, iridium, ruthenium, or a combination thereof.

4. The method of claim 3 wherein the Group VIII metal-containing surface comprises elemental platinum.

5. The method of claim 1 wherein the Group VIII metal is present in an amount of about 10 atomic percent or more.

6. The method of claim 1 wherein the substrate is a semiconductor substrate or substrate assembly.

7. The method of claim 1 wherein the polishing surface comprises a polishing pad and the planarization composition comprises a plurality of abrasive particles.

8. The method of claim 1 wherein the planarization composition comprises a plurality of abrasive particles having a hardness of no greater than about 9 Mohs.

9. The method of claim 8 wherein the plurality of abrasive particles comprise CeO_2, Al_2O_3, SiO_2, and mixtures thereof.

10. The method of claim 1 which is carried out in one step.

11. The method of claim 1 wherein the oxidizing gas is selected from the group consisting of oxygen, ozone, air, chlorine, nitrous oxide, nitric oxide, sulfur trioxide, an interhalogen, and combinations thereof.

12. The method of claim 11 wherein the oxidizing gas is selected from the group consisting of oxygen, air, and combinations thereof.

13. The method of claim 12 wherein the oxidizing gas is oxygen.

14. The method of claim 1 wherein planarizing is carried out using a fixed abrasive article.

15. A planarization method comprising:

positioning a Group VIII metal-containing surface of a substrate to interface with a polishing surface, wherein the Group VIII metal is selected from the group consisting of rhodium, iridium, ruthenium, osmium,

palladium, platinum, and combinations thereof;

supplying a planarization composition in proximity to the interface; and

planarizing the Group VIII metal-containing surface;

wherein the planarization composition comprises an oxidizing gas selected from the group consisting of oxygen, air, chlorine, nitrous oxide, nitric oxide, sulfur trioxide, an interhalogen, and combinations thereof.

16. A planarization method comprising:

positioning a Group VIII metal-containing surface of a substrate to interface with a polishing surface, wherein the Group VIII metal is selected from the group consisting of rhodium, iridium, ruthenium, osmium, palladium, platinum, and combinations thereof;

supplying a planarization composition in proximity to the interface; and

planarizing the Group VIII metal-containing surface;

wherein the planarization composition comprises an oxidizing gas having a standard reduction potential of at least about 1.4 versus a standard hydrogen electrode at 25°C, wherein the oxidizing gas is present in the composition in an amount of no greater than about 10% by weight.

17. A planarization method comprising:

providing a semiconductor substrate or substrate assembly including at least one region of a platinum-containing surface;

providing a polishing surface;

providing a planarization composition at an interface between the at least one region of platinum-containing surface and the polishing surface; and

planarizing the at least one region of platinum-containing surface;

wherein the planarization composition comprises an oxidizing gas

having a standard reduction potential of at least about 1.4 versus a standard hydrogen electrode at 25°C.

18. The method of claim 17 wherein the platinum is present in an amount of about 10 atomic percent or more.

19. The method of claim 17 wherein the platinum-containing surface comprises elemental platinum.

20. The method of claim 17 wherein the planarization composition comprises a plurality of abrasive particles selected from the group consisting of CeO_2, Al_2O_3, SiO_2, and mixtures thereof.

21. The method of claim 17 wherein the platinum-containing surface comprises a platinum alloy.

22. The method of claim 17 wherein the semiconductor substrate or substrate assembly is a silicon wafer.

23. The method of claim 17 wherein the oxidizing gas is selected from the group consisting of oxygen, nitrous oxide, air, or combinations thereof.

24. The method of claim 23 wherein the oxidizing gas is selected from the group consisting of oxygen, air, or combinations thereof.

25. The method of claim 24 wherein the oxidizing gas is selected from the group consisting of oxygen.

26. A planarization method for use in forming a capacitor or barrier layer:

providing a wafer having a patterned dielectric layer formed thereon and a Group VIII metal-containing layer formed over the patterned dielectric

layer, wherein the Group VIII metal is selected from the group consisting of rhodium, iridium, ruthenium, osmium, palladium, platinum, and combinations thereof;

positioning a first portion of a polishing surface for contact with the Group VIII metal-containing layer;

providing a planarization composition in proximity to the contact between the polishing surface and the Group VIII metal-containing layer; and

planarizing the Group VIII metal-containing layer;

wherein the planarization composition comprises an oxidizing gas having a standard reduction potential of at least about 1.4 versus a standard hydrogen electrode at 25°C.